DPM QFL - 1651, 1652, 1585, 1940, 1588 , 1625 1561, 1721, 1680, 1530, 2077, 2099, 2098, 2184, 2176, Aluminum Company of America **Material Safety Data Sheet** ALCOA 1501 Alcoa Building, Pittsburgh, PA 15219 Phone No. 412-553-4001 **Common Name Date** Revised 1984-12-03 1985-07-10 Aluminum Alloys Hazardous Material (as Defined in 29 CFR 1910.1200) **Acute Toxicity** ☐ Explosive ☐ Flammable Organic Peroxide ☐ Irritant □ Ingestion Other Health Hazard (See Sec. VI) Combustible ☐ Reactive Pyrophoric □ Sensitizer Inhalation Oxidizer ☐ Water Reactive ☐ Compressed Gas ☐ Corrosive ☐ Absorption OSHA or ACGIH Limit SECTION I. Material Description 1680 Dms Chemical Name & Formula: Mixture (See Attachment) Other Designation: CAS No.: See Attachment Manufacturer: Alcoa SECTION II. Ingredients Occupational Exposure Limits ACGIH TLVs (1984) OSHA PELS See attachment *Cu - Fume - 0.1 mg/m³ (TWA) Al - Total Dust - 10 mg/m³ (TWA) for specific alloy ingredients. - 20 mg/m³ (STEL) - Resp. Dust & Fume - 5 mg/m³ (TWA) *Cu - Fume - 0.2 mg/m3 (TWA) *Reference Section VI for processes and alloys where copper limits apply.

SECTION III. **Physical Data**

Physical Form: Solid (Ingot, Wrought, Castings, etc.)

Boiling Temperature:

Freeze-Meit Temperature: Wide Range - generally 900 - 1200°F (482-649°C)

Vapor Pressure:

NA . Made to take and problems to the problems

Evaporation Rate: Specific Gravity:

Density:

Range - generally 0.095 - 0.113 lb/in.3

Water Solubility:

None NA

pH: Color:

Silvery .

Odor

None

SECTION IV. Fire and Explosion Data

Flashpoint: Auto-Ignition Temp.: Flammability Limits in Air: NA

Castings, ingots, sheet, plate, forgings, extrusions, etc., do not present fire or explosion hazards under normal conditions. Use fire fighting methods and materials that are appropriate for surrounding fire.

Small chips, fine turnings, and dust may ignite readily. Use coarse water spray on chips, turnings, etc. Use class D extinguishing agents or dry sand on fines. Do not use halogenated extinguishing agents on small chips or fines.

Fire fighters should wear self-contained breathing apparatus and full protective clothing when appropriate.

Dust clouds may be explosive. Prevent formation of a dust cloud.

Molten aluminum may explode on contact with water. It may also react violently with water, rust, and certain metal oxides (e.g., oxides of copper, iron, and lead).

SECTION V. Reactivity Data

Stable under normal conditions of use, storage and transportation.

For finely divided aluminum (e.g., small chips, fines):

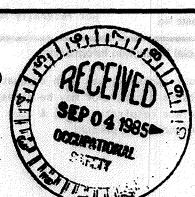
With water: Generates hydrogen and heat slowly. Water/aluminum mixtures may be hazardous when confined.

Oxidizes at a temperature-dependent rate.

With strong oxidizers: Violent reaction with much heat generation.

With acids & alkalies: Reacts to generate hydrogen.

With halogenated compounds: Halogenated hydrocarbons can react violently with finely divided aluminum.



Section VI. Health Hazard Information

(See Section If for exposure limits.)

Aluminum dust/fines and fumes are low health risk by inhalation. For standard operations (e.g., milling, cutting, grinding), aluminum should be treated as a nuisance dust and is so defined by the American Conference of Governmental Industrial Hygienists (ACGIH). According to AIHA Hygiene Guide:

Toxicity by ingestion: None expected.

Skin & Eyes: Not an irritant.

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As stated above, most alloys have a low health risk potential. The potential for overexposure to copper fume, however, may exist when welding, flame cutting, etc. on alloys containing high amounts of copper (e.g., >2.5%). The alloys include 2XX.X, 3XX.X, & 8XX.X casting series alloys; 2XXX and 7XXX series and 4145 wrought alloys. See attachment for specific alloys. Overexposure to copper fume can result in upper respiratory tract irritation, nausea, and metal fume fever.

Nickel and chromium are contained in certain alloys at levels of 0.1% or more (see attachment). Chromium and nickel and their compounds are listed in the 3rd Annual Report on Carcinogens, as prepared by the National Toxicology Program (NTP). Their presence in our alloys, however, does not present a carcinogenic or other health concern due to either their low concentrations or the chemical form in which they are present.

Plasma arc cutting or welding aluminum can generate ozone. Overexposures to ozone can result in mucous membrane

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irritation, as well as pulmonary changes including irritation, congestion and edema

Reference Álcoa MSDS No. 214 for hazards and appropriate safeguards concerning welding with aluminum.

Section VII. Spill, Leak & Disposal Procedures

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Control temperature and the size

Collect scrap for remelting.

RCRA Hazardous Waste No.

Not Federally Regulated

Section VIII. Special Protection Information

adequate ventilation to meet the exposure limits as listed in Section II. Where the exposure limit sor may be exceeded, use NIOSH approved respiratory protection. Select appropriate respirator, & & fume respirator, etc.) based on the actual or potential airborne contaminants

and their concentrations present

Section IX. Special Precautions & Comments

Handling molten aluminum presents special hazards. Reference Alcoa MSDS No. 478.

Handling remelt ingot presents special hazards. Reference Alcoa MSDS No. 516.

Handling aluminum powder and granule products presents specials hazards. Reference Alcoa MSDS Nos. 123, **0124, 125, 126, or 127.** d paragrap of the contract of the co

Chemical substance components have been reported to the EPA Office of Toxic Substances in accordance with the requirements of the Toxic Substances Control Act (Title 40 CFR Part 710).

ficher affiliasi bas Jaise Japan este escreta D.O.T. Shipping Name, Hazard Class, I.D. No. (if applicable)

Not Regulated

Section X. References

American Industrial Hygiene Assoc. (AIHA) Hygienic Guide Series (Revised June 1978). 海安林康年 "安安的自治,首直治瞳色",正数二数是"治处性自动之"。 医结核性 自体 化自动化合物

Alcoa MSDS Nos.:

123, 124, 126, 127 - Atomized Aluminum Powders; 125 - Atomized Aluminum Granules; 214 - Welding Wire;

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303, C303, 326, 333, 337, C337, C384, 390, C390 - See attachment for content;

471 - Aluminum Dross; 478 - Molten Aluminum; 516 - Remelt Ingot; C516; Information herein is given in good faith as

517 - Aluminum Scrap

authoritative and valid; however, no warranty,

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offices and

Material Safety Data Sheet

Attachment



Aluminum Company of America 1501 Alcoa Building, Pittsburgh, PA 15219

No 3840

ALUMINUM ALLOY* INGREDIENTS (BY SERIES)

CREATER THAN OR EQUAL TO 1%

(0.1% for Nickel and Chromium)

CAS No.: Si (7440-21-3); Fe (7439-89-6); Cu (7440-50-8); Mn (7439-96-5); Mg (7439-95-4); Cr (7440-47-3); Ni (7440-02-0); Zn (7440-66-6); Al (7429-90-5); Sn (7440-31-5)

1. Castings (Ingot, Sand, Permanent Mold, & Die)

1XX.0	2XX.0	3XX.0	4XX.0	5XX.0	7XX.0	8XX.0
Aluminum	Silicon	Silicon	Silicon	Silicon	Iron	Silicon
	Iron	Iron	Iron	Iron	Copper	Copper
	Copper	Copper	Nicke1	Magnesium	Magnesium	Nicke1
	Magnesium	Magnesium	Aluminum	Zinc	Chromium	A1 umi num
	Chromium	Chromium		A1 umi num	Nickel .	Tin
	Nickel	Nickel			Zinc	
	Zinc	Zinc	2774		A1 um i num	
	Aluminum	Aluminum	8,00			

II. Wrought Aluminum Alloys

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1XXX	2XXX	3XXX	4XXX	<u>5XXX</u> .	6XXX	7XXX	8XXX
Aluminum	Silicon	Silicon	Silicon	Manganese	Silicon	Copper	Silicon
-	Iron	Manganese	Iron	Magnesium	Iron	Manganese	Iron
	Copper	Magnesium	Copper	Chromium	Copper	Magnes i um	Copper
	Manganese	Chromium	Manganese	Zinc	Manganese	Chromium	Manganese
	Magnesium	Aluminum	Magnesium	Aluminum	Magnes i um	Zinc	Nickel
	Chromium		Chromium		Chromium	A1 umi num	Zinc
	Nickel		Ni ckel		Zinc		Aluminum
	Alumi num	444	Aluminum		Aluminum		Tin

* Please reference the following Alcoa Material Safety Data Sheets for these specific aluminum alloys:

MSDS No.	Alloys
No. 303 - Alcoa Aluminum Casting Alloys Containing Beryllium Additions.	A357.0, A357.2, 358.2, 364.2
No. 326 - P/M Alloys Containing Cobalt Additions	P/M Alloys 7090 & 7091 - Billet & Wrought Products
No. 333 - Alcoa Aluminum Alloys Containing Zinc Additions.	C8F, C9F
No. 337 - Alcoa Aluminum Alloys Containing Lithium Additions.	Alithalite, Alithalloy, 2090
No. 390 - Alcoa Aluminum Alloys Containing Lead Additions.	6262, 2011

Note: Other non-registered "C" alloys are covered by MSDSs numbered C303, C337, C384, C390, and C516

Material Safety Data Sheet

Attachment

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Aluminum Company of America
1501 Alcoa Building, Pitteburgh, PA 15219 No. 3.8.6

ALLOYS CONTAINING >2.5% COPPER (COPPER FUME LINITS APPLY - SEE SECTION VI)

A206.2	308.0	853.0	2011	4145	7XXX 7001		27 60
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A242.2	333.0		2090		्राज्यसम्बद्धाः स्थान	Sept. 11 to \$1882\$50.00 ave.	
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296.0	380.2	20.43	2124				
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	384.2		2218		Contract of		
	385.1		2219				
	A390.0		2224		Akoreista (A		
	A390.1		2319	1831 1130 130	September 1 September 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	390.2		2324	1	sagailiai na ch	al-188 - Sand Alexandria	
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